

WHEREFORE IT IS CLAIMED:

1. A multiple-component tampon applicator formed from at least three separate components selected from the group 5 consisting of a barrel, a fingergrip, a plunger, and an insertion tip,

wherein said at least three separate components are formed independently from one another, prior to forming said applicator.

2. The applicator of claim 1, wherein one or more of said at least three separate components are formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

3. The applicator of claim 1, wherein two or more of said at least three separate components are formed from a material 20 selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

4. The applicator of claim 1, wherein three or more of
said at least three separate components are formed from a
material selected from the group consisting of biopolymer,
cardboard, heat shrink plastic, paper slurry, plastic, plastic
5 tubing, pulp slurry, pulp-molded paper, and any combinations
thereof.

M. C. O. O. T. 1895

5. The applicator of claim 1, wherein at least one of said at least three separate components are coated with a material selected from the group consisting of cellophane, cellulose, epoxy, lacquer, nitrocellulose, nylon, plastic, polyester, polylactide, polyolefin, polyvinyl alcohol, polyvinyl chloride, silicone, wax, and any combinations thereof.

6. The applicator of claim 1, wherein at least one of said at least three separate components is said barrel, and wherein said barrel is formed from cardboard.

20

7. The applicator of claim 1, wherein said barrel has a forward end and a rearward end opposite said forward end.

8. The applicator of claim 7, wherein said barrel further comprises three to eight petals disposed on said forward end.

9. The applicator of claim 1, wherein at least one of said at least three separate components is said fingergrip, and wherein said fingergrip is formed from pulp molded paper.

5 10. The applicator of claim 1, wherein said fingergrip has a forward end, a rearward end, and an axially extending channel.

11. The applicator of claim 10, wherein said fingergrip has a reduced cross-sectional area from that of said barrel, and wherein a cross-sectional area of said fingergrip at said forward end is larger than a cross-sectional area at said rearward end of said fingergrip.

12. The applicator of claim 10, wherein said channel has a cross-sectional area adapted to accommodate said plunger.

13. The applicator of claim 1, wherein at least one of said at least three separate components is said fingergrip, and wherein said fingergrip further comprises at least one gripping structure.

20 14. The applicator of claim 13, wherein said at least one gripping structure is circumferentially disposed around said fingergrip.

15. The applicator of claim 13, wherein said at least one gripping structure is selected from the group consisting of one or more abrasive materials, embossments, grooves, high wet coefficient of friction materials, lances, pressure sensitive adhesives, protuberances, slits, treads, and any combinations thereof.

16. The applicator of claim 13, wherein said at least one gripping structure is formed in a shape selected from the group consisting of arc, circle, concave, cone, convex, diamond, line, oval, polygon, rectangle, rib, square, triangle, and any combinations thereof.

17. The applicator of claim 13, wherein said at least one gripping structure is raised, depressed, or a combination thereof.

18. An applicator having three separate components, the three separate components comprising:

20
a barrel having petals pre-formed on an insertion end of said barrel prior to loading said barrel with an absorbent plegget;

a fingergrip having a reduced cross-sectional area; and

a plunger having a reduced cross-sectional area;

5 wherein said barrel, fingergrip and plunger are formed as the three separate components, prior to forming the applicator.

19. The applicator of claim 18, wherein one or more of said three separate components are individually formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

15 20. The applicator of claim 18, wherein two or more of said three separate components are individually formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

21. The applicator of claim 18, wherein at least one of said three separate components is coated with a material selected from the group consisting of cellophane, cellulose,

epoxy, lacquer, nitrocellulose, nylon, plastic, polyester, polylactide, polyolefin, polyvinyl alcohol, polyvinyl chloride, silicone, wax, and any combinations thereof.

5 22. The applicator of claim 18, wherein said barrel is formed from cardboard.

10 23. The applicator of claim 18, wherein said fingergrip has a forward end, a rearward end, and an axially extending channel.

15 24. The applicator of claim 23, wherein said reduced cross-sectional area of said fingergrip at said forward end is larger than a cross-sectional area at said rearward end of said fingergrip.

20 25. The applicator of claim 23, wherein said channel has a cross-sectional area adapted to accommodate said plunger.

26. The applicator of claim 18, wherein said fingergrip further comprises at least one gripping structure.

27. The applicator of claim 26, wherein said at least one gripping structure is circumferentially disposed around said

fingergrip.

28. The applicator of claim 26, wherein said at least one gripping structure is selected from the group consisting of one or more abrasive materials, embossments, grooves, high wet coefficient of friction materials, lances, pressure sensitive adhesives, protuberances, slits, treads, and any combinations thereof.

29. The applicator of claim 26, wherein said at least one gripping structure is formed in a shape selected from the group consisting of arc, circle, concave, cone, convex, diamond, line, oval, polygon, rectangle, rib, square, triangle, and any combinations thereof.

30. The applicator of claim 26, wherein said at least one gripping structure is raised, depressed, or a combination thereof.

20 31. An applicator having three separate components, the
three separate components comprising:

a barrel having a fingergrip integrally formed thereon;

an insertion tip; and

a plunger,

5 wherein said barrel, insertion tip, and plunger are formed as the three separate components prior to forming the applicator.

10 32. The applicator of claim 31, wherein one or more of said three separate components are individually formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

15

20 33. The applicator of claim 31, wherein two or more of said three separate components are individually formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

34. The applicator of claim 31, wherein at least one of said three separate components are coated with a material

selected from the group consisting of cellophane, cellulose, epoxy, lacquer, nitrocellulose, nylon, plastic, polyester, polylactide, polyolefin, polyvinyl alcohol, polyvinyl chloride, silicone, wax, and any combinations thereof.

5

35. The applicator of claim 31, wherein said insertion tip comprises three to eight petals.

36. The applicator of claim 31, wherein said fingergrip further comprises at least one gripping structure.

37. The applicator of claim 36, wherein said at least one gripping structure is circumferentially disposed around said fingergrip.

45

38. The applicator of claim 36, wherein said at least one gripping structure is selected from the group consisting of one or more abrasive materials, embossments, grooves, high wet coefficient of friction materials, lances, pressure sensitive adhesives, protuberances, slits, treads, and any combinations thereof.

20

39. The applicator of claim 36, wherein said at least one gripping structure is formed in a shape selected from the group

consisting of arc, circle, concave, cone, convex, diamond, line, oval, polygon, rectangle, rib, square, triangle, and any combinations thereof.

5 40. The applicator of claim 36, wherein said at least one gripping structure is raised, depressed, or a combination thereof.

10 41. An applicator having four separate components, the four separate components comprising:

an insertion tip;

a barrel;

a fingergrip; and

a plunger,

20 wherein said insertion tip, barrel, fingergrip, and plunger are formed as the four separate components prior to forming the applicator.

42. The applicator of claim 41, wherein one or more of
said four separate components are individually formed from
material selected from the group consisting of biopolymer,
cardboard, heat shrink plastic, paper slurry, plastic, plastic
5 tubing, pulp slurry, pulp-molded paper, and any combinations
thereof.

10
11
12
13
14
15
16
17
18
19
20

43. The applicator of claim 41, wherein two or more of
said four separate components are individually formed from
material selected from the group consisting of biopolymer,
cardboard, heat shrink plastic, paper slurry, plastic, plastic
tubing, pulp slurry, pulp-molded paper, and any combinations
thereof.

20

44. The applicator of claim 41, wherein three or more of
said four separate components are individually formed from
material selected from the group consisting of biopolymer,
cardboard, heat shrink plastic, paper slurry, plastic, plastic
tubing, pulp slurry, pulp-molded paper, and any combinations
thereof.

45. The applicator of claim 41, wherein at least one of
said four separate components are coated with a material
selected from the group consisting of cellophane, cellulose,

epoxy, lacquer, nitrocellulose, nylon, plastic, polyester, polylactide, polyolefin, polyvinyl alcohol, polyvinyl chloride, silicone, wax, and any combinations thereof.

5 46. The applicator of claim 41, wherein said insertion tip comprises three to eight petals.

47. The applicator of claim 41, wherein said fingergrip has a forward end, a rearward end, and an axially extending channel.

48. The applicator of claim 47, wherein said fingergrip has a reduced cross-sectional area from that of said barrel, and wherein a cross-sectional area of said fingergrip at said forward end is larger than a cross-sectional area at said rearward end of said fingergrip.

49. The applicator of claim 48, wherein said channel has a cross-sectional area adapted to accommodate said plunger.

20 50. The applicator of claim 41, wherein said fingergrip further comprises at least one gripping structure.

51. The applicator of claim 50, wherein said at least one gripping structure is circumferentially disposed around said fingergrip.

5 52. The applicator of claim 50, wherein said at least one gripping structure is selected from the group consisting of one or more abrasive materials, embossments, grooves, high wet coefficient of friction materials, lances, pressure sensitive adhesives, protuberances, slits, treads, and any combinations thereof.

53. The applicator of claim 50, wherein said at least one gripping structure is formed in a shape selected from the group consisting of arc, circle, concave, cone, convex, diamond, line, oval, polygon, rectangle, rib, square, triangle, and any combinations thereof.

20 54. The applicator of claim 50, wherein said at least one gripping structure is raised, depressed, or a combination thereof.

55. A method of making an applicator having three separate components comprising the steps of:

(a) forming a barrel having a forward end and a rearward end;

(b) forming a fingergrip having a forward end, a rearward end, and an axially extending channel between said forward end and said rearward end;

(c) forming a plunger having a forward end and a rearward end; and

(d) connecting said forward end of said fingergrip with said rearward end of said barrel.

56. The method of claim 55, further comprising, following step (d), a step of inserting said forward end of said plunger into said channel of said rearward end of said fingergrip.

57. The method of claim 55, further comprising, prior to step (d), a step of inserting said rearward end of said plunger into said channel of said forward end of said fingergrip.

58. The method of claim 55, further comprising, prior to step (a), a step of pre-forming three to eight petals on said forward end of said barrel.

59. The method of claim 55, wherein one or more of said three separate components are formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, 5 pulp-molded paper, and any combinations thereof.

60. The method of claim 55, wherein two or more of said three separate components are formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

61. The method of claim 55, wherein at least one of said three separate components is coated with a material selected from the group consisting of cellophane, cellulose, epoxy, lacquer, nitrocellulose, nylon, plastic, polyester, polylactide, polyolefin, polyvinyl alcohol, polyvinyl chloride, silicone, wax, and any combinations thereof.

20 62. The method of claim 55, wherein said forward end of said fingergrip has an external cross-sectional area slightly larger than an internal cross-sectional area of said rearward end of said barrel, and wherein said fingergrip and said barrel are connectably secured by interference fit.

63. The method of claim 55, wherein said forward end of
said fingergrip has an internal cross-sectional area slightly
smaller than an external cross-sectional area of said rearward
end of said barrel, and wherein said fingergrip and said barrel
5 are connectably secured by interference fit.

460.2126USU
64. The method of claim 55, wherein said forward end of
said fingergrip further comprises one or more internal tabs,
ridges, slots, and any combination thereof, for securably
connecting said fingergrip to said barrel.

65. The method of claim 55, wherein said forward end of
said fingergrip further comprises one or more external tabs,
ridges, slots, and any combination thereof, for securably
connecting said fingergrip to said barrel.
15

66. The method of claim 55, wherein said rearward end of
said barrel further comprises one or more internal tabs, ridges,
slots, and any combination thereof, for securably connecting
20 said barrel to said fingergrip.

67. The method of claim 55, wherein said rearward end of
said barrel further comprises one or more external tabs, ridges,
slots, and any combination thereof, for securably connecting

said barrel to said fingergrip.

68. The method of claim 55, wherein said fingergrip is formed from heat-shrinkable material having a diameter larger 5 than a diameter of said barrel, and wherein said heat-shrinkable material is shrunk to securably fit over an outside surface of said barrel.

69. The method of claim 68, wherein said heat-shrinkable material is further shrunk at said rearward end of said fingergrip to form a reduced cross-sectional area.

70. A method of making an applicator having three separate components comprising the steps of:

(a) forming a barrel having a forward end and a rearward end;

20 (b) forming an insertion tip having a forward insertion end and a rearward end;

(c) forming a plunger having a forward end; and

(d) connecting said rearward end of said insertion tip with

said forward end of said barrel.

71. The method of claim 70, further comprising, after step (d), a step of inserting said forward end of said plunger into
5 said rearward end of said barrel.

72. The method of claim 70, further comprising, prior to step (d), a step of inserting said rearward end of said plunger into said forward end of said barrel.

73. The method of claim 70, wherein one or more of said three separate components are formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

74. The method of claim 70, wherein two or more of said three separate components are formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink
20 plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

75. The method of claim 70, wherein at least one of said three separate components is coated with a material selected from the group consisting of cellophane, cellulose, epoxy, lacquer, nitrocellulose, nylon, plastic, polyester, polylactide, 5 polyolefin, polyvinyl alcohol, polyvinyl chloride, silicone, wax, and any combinations thereof.

76. The method of claim 70, wherein said forward insertion end of said insertion tip comprises three to eight petals.

77. The method of claim 70, wherein said rearward end of said barrel has a fingergrip integrally formed thereon.

78. The applicator of claim 77, wherein said fingergrip further comprises at least one gripping structure.

79. The applicator of claim 78, wherein said at least one gripping structure is circumferentially disposed around said fingergrip.

20

80. The applicator of claim 78, wherein said at least one gripping structure is selected from the group consisting of one or more abrasive materials, embossments, grooves, high wet coefficient of friction materials, lances, pressure sensitive

adhesives, protuberances, slits, treads, and any combinations thereof.

81. The applicator of claim 78, wherein said at least one gripping structure is formed in a shape selected from the group consisting of arc, circle, concave, cone, convex, diamond, line, oval, polygon, rectangle, rib, square, triangle, and any combinations thereof.

82. The applicator of claim 78, wherein said at least one gripping structure is raised above, depressed below, or a combination thereof, a surface of said barrel.

83. The method of claim 78, wherein said fingergrip has a reduced cross-sectional area than that of said forward end of said barrel.

84. The method of claim 70, wherein said forward end of said barrel comprises one or more tabs, ridges, slots, and any combination thereof, for securely connecting said barrel to said insertion tip.

85. The method of claim 70, wherein said rearward barrel end of said insertion tip comprises one or more tabs, ridges,

slots, and any combination thereof, for securably connecting said insertion tip to said barrel.

86. A method of making an applicator comprising the steps
5 of:

(a) forming a barrel having an forward end and a rearward end;

(b) forming a fingergrip having a forward end, a rearward end, and an axially extending channel between said forward end and said rearward end; and

(c) inserting said fingergrip and said barrel into a heat former,

wherein said barrel and said fingergrip are fused into a unitary fingergrip barrel portion.

20 87. The method of claim 86, further comprising, after step
(b), a step of applying adhesive to said forward end of said fingergrip.

88. The method of claim 86, further comprising, after step (b), a step of applying adhesive to said rearward end of said barrel.

5 89. The method of claim 86, wherein said fingergrip and said barrel are formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

10 40 45 50 55 60 65 70 75 80 85 90 95 100
90. The method of claim 86, wherein at least one of said barrel and fingergrip is coated with a material selected from the group consisting of cellophane, cellulose, epoxy, lacquer, nitrocellulose, nylon, plastic, polyester, polylactide, polyolefin, polyvinyl alcohol, polyvinyl chloride, silicone, wax, and any combinations thereof.

20 91. The applicator of claim 86, wherein said fingergrip further comprises at least one gripping structure.

92. The applicator of claim 91, wherein said at least one gripping structure is circumferentially disposed around said fingergrip.

93. The applicator of claim 91, wherein said at least one gripping structure is selected from the group consisting of one or more abrasive materials, embossments, grooves, high wet coefficient of friction materials, lances, pressure sensitive adhesives, protuberances, slits, treads, and any combinations thereof.

1000 1000 1000 1000 1000

94. The applicator of claim 91, wherein said at least one gripping structure is formed in a shape selected from the group consisting of arc, circle, concave, cone, convex, diamond, line, oval, polygon, rectangle, rib, square, triangle, and any combinations thereof.

95. The applicator of claim 91, wherein said at least one gripping structure is raised above, depressed below, or a combination thereof, a surface of said barrel.

96. A method of making an applicator having four separate components comprising the steps of:

20

(a) forming a barrel having a forward end and a rearward end;

(b) forming a fingergrip having a forward end, a rearward end, and an axially extending channel between said forward end and said rearward end;

5 (c) forming an insertion tip having a forward insertion end and a rearward end;

(d) forming a plunger having a forward end;

(e) connecting said forward end of said fingergrip with said rearward end of said barrel;

(f) connecting said rearward end of said insertion tip to said forward end of said barrel; and

(g) inserting said forward end of said plunger into said channel of said fingergrip.

97. The method of claim 96, wherein one or more of said
20 four separate components are formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

98. The method of claim 96, wherein two or more of said four separate components are formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, 5 pulp-molded paper, and any combinations thereof.

99. The method of claim 96, wherein three or more of said four separate components are formed from a material selected from the group consisting of biopolymer, cardboard, heat shrink plastic, paper slurry, plastic, plastic tubing, pulp slurry, pulp-molded paper, and any combinations thereof.

100. The method of claim 96, wherein at least one of said four separate components is coated with a material selected from the group consisting of cellophane, cellulose, epoxy, lacquer, nitrocellulose, nylon, plastic, polyester, polylactide, polyolefin, polyvinyl alcohol, polyvinyl chloride, silicone, wax, and any combinations thereof.

20 101. The method of claim 96, wherein said forward insertion end of said insertion tip comprises three to eight petals.

102. The applicator of claim 96, wherein said fingergrip further comprises at least one gripping structure.

103. The applicator of claim 102, wherein said at least 5 one gripping structure is circumferentially disposed around said fingergrip.

104. The applicator of claim 102, wherein said at least one gripping structure is selected from the group consisting of one or more abrasive materials, embossments, grooves, high wet coefficient of friction materials, lances, pressure sensitive adhesives, protuberances, slits, treads, and any combinations thereof.

105. The applicator of claim 102, wherein said at least one gripping structure is formed in a shape selected from the group consisting of arc, circle, concave, cone, convex, diamond, line, oval, polygon, rectangle, rib, square, triangle, and any combinations thereof.

20

106. The applicator of claim 102, wherein said at least one gripping structure is raised above, depressed below, or a combination thereof, a surface of said barrel.

107. The method of claim 96, wherein said forward end of said fingergrip has an external cross-sectional area slightly larger than that of an internal cross-sectional area of said rearward end of said barrel, and wherein said fingergrip and 5 said barrel are connectably secured by interference fit.

108. The method of claim 96, wherein said forward end of said fingergrip has an internal cross-sectional area slightly smaller than an external cross-sectional area of said rearward end of said barrel, and wherein said fingergrip and said barrel are connectably secured by interference fit.

109. The method of claim 96, wherein said forward barrel end of said fingergrip further comprises one or more external tabs, ridges, slots, or any combination thereof, for securably connecting said fingergrip to said barrel.

110. The method of claim 96, wherein said forward barrel end of said fingergrip further comprises one or more internal tabs, ridges, slots, or any combination thereof, for securably connecting said fingergrip to said barrel.

111. The method of claim 96, wherein said rearward end of said barrel further comprises one or more external tabs, ridges, slots, or a combination thereof, for securely connecting said barrel to said fingergrip.

5

112. The method of claim 96, wherein said rearward end of said barrel further comprises one or more internal tabs, ridges, slots, or a combination thereof, for securely connecting said barrel to said fingergrip.

15

113. The method of claim 96, wherein said forward end of said barrel further comprises one or more tabs, ridges, slots, or any combination thereof, for securely connecting said barrel to said insertion tip.

114. The method of claim 96, wherein said rearward end of said insertion tip further comprises one or more tabs, ridges, slots, or any combination thereof, for securely connecting said insertion tip to said barrel.

20

115. The method of claim 96, wherein said fingergrip is formed from heat-shrinkable material having a diameter larger than a diameter of said barrel, and wherein said heat-shrinkable material is shrunk to securably fit over an outside surface of

said barrel.

116. The method of claim 115, wherein said heat-shrinkable material is further shrunk at said rearward end of said
5 fingergrip to form a reduced cross-sectional area.